

REMARKS

Claims 1-32 are all the claims presently pending in this application. Claim 22 has been amended to more particularly define the claimed invention.

It is noted that the amendments are made only to more particularly define the invention and not for distinguishing the invention over the prior art, for narrowing the scope of the claims, or for any reason related to a statutory requirement for patentability. It is further noted that, notwithstanding any claim amendments made herein, Applicant's intent is to encompass equivalents of all claim elements, even if amended herein or later during prosecution.

Claim 22 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite. Claim 22 has been amended in a manner believed fully responsive to all points raised by the Examiner.

Claims 1-7, 9-19 and 21-24 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Chaudhuri et al., U.S. Pat. App. Pub. No. 2003/0170020 further in view of Fukashiro et al., U.S. Pat. Pub. No. 2005/0025481.

Claim 8 and 20 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Chaudhuri et al., U.S. Pat. App. Pub. No. 2003/0170020 in view of Fukashiro et al., U.S. Pat. Pub. No. 2005/0025481 further in view of Tammela et al., U.S. Pat. No. 6,868,234.

Claims 25-26 and 31-32 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Sugawara, et al., U.S. Pat. App. Pub. No. 2002/0044315 further in view of Chaudhuri et al., U.S. Pat. App. Pub. No. 2003/0170020.

Claims 27-28 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Bortolini, U.S. Pat. No. 6,813,408 further in view of Sugawara, et al., U.S. Pat. App. Pub. No.

2002/0044315 further in view of Chaudhuri et al., U.S. Pat. App. Pub. No. 2003/0170020.

Claims 29-30 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Sugawara, et al., U.S. Pat. App. Pub. No. 2002/0044315 further in view of Yamashita et al., U.S. Pat. No. 5,675,676 further in view of Chaudhuri et al., U.S. Pat. App. Pub. No. 2003/0170020.

These rejections are respectfully traversed in view of the following discussion.

I. THE PRIOR ART REJECTIONS

A. The 35 U.S.C. § 103(a) Rejection over Chaudhuri et al., U.S. Pat. App. Pub. No. 2003/0170020 further in view of Fukashiro et al., U.S. Pat. Pub. No. 2005/0025481

The Examiner alleges that Chaudhuri et al., U.S. Pat. App. Pub. No. 2003/0170020, (Chaudhuri), further in view of Fukashiro et al., U.S. Pat. Pub. No. 2005/0025481, (Fukashiro), makes obvious the invention of claims 1-7, 9-19 and 21-24.

The Examiner alleges that one of ordinary skill in the art would have been motivated to modify Chaudhuri with the teaching from Fukashiro to form the invention of claims 1-7, 9-19 and 21-24. Applicant submits, however that these references would not have been combined and even if combined, the combination would not teach or suggest each element of the claimed invention.

Indeed, Applicant submits, however, that neither Chaudhuri, nor Fukashiro, nor any alleged combination thereof, teaches or suggests, "a switching device including at least two bi-directional ports...when a failure has occurred in said optical signal transmitting communication line, said switching device switches so that said optical signal fed from said optical signal transmitting device is transmitted via one of said at least two bi-directional

ports to said optical signal receiving communication line and, when a failure has occurred in said optical signal receiving communication line, said switching device switches so that said optical signal to be fed to said optical signal receiving device is received via an other of said at least two bi-directional ports from said optical signal transmitting communication line...,” of Applicant’s claimed invention of independent claim 1, and similarly, independent claims 4, 7, 10, 13, 16, 19 and 22.

Neither Chaudhuri nor Fukashiro discloses optical signals transmitted in a bidirectional direction through a single optical communication line. For example, in Applicant’s claimed invention “*when a failure has occurred in said optical signal transmitting communication line*,” the switching device switches the optical signal that is normally fed to the transmitted device via the transmitting communication line, to a bi-directional port to be transmitted on the optical signal receiving communication line, thus enabling the receiving communication line to have optical signals bi-directionally transmitted, *i.e.*, optical signals being received and optical signals being transmitted thereon at the same time.

Likewise, Applicant’s claimed invention “*when a failure has occurred in said optical signal receiving communication line*,” the switching device switches the optical signal that is normally received by the receiving device via the receiving communication line, to a bi-directional port to be transmitted on the optical signal transmitting communication line, thus enabling the transmitting communication line to have optical signals bi-directionally transmitted, *i.e.*, optical signals being transmitted and optical signals being received thereon at the same time.

Accordingly, since both Chaudhuri and Fukashiro are not relevant to the claimed

invention, the claimed invention is patentable over the combined teachings of Chaudhuri and Fukashiro.

Therefore, Applicant respectfully requests the Examiner to reconsider and withdraw this rejection since the alleged prior art references to Chaudhuri and Fukashiro (either alone or in combination) fail to teach or suggest each element and feature of Applicant's claimed invention.

B. The 35 U.S.C. § 103(a) Rejection over Chaudhuri et al., U.S. Pat. App. Pub. No. 2003/0170020 in view of Fukashiro et al., U.S. Pat. Pub. No. 2005/0025481 further in view of Tammela et al., U.S. Pat. No. 6,868,234

The Examiner alleges that Chaudhuri et al., U.S. Pat. App. Pub. No. 2003/0170020 in view of Fukashiro et al., U.S. Pat. Pub. No. 2005/0025481, (Chaudhuri and Fukashiro), further in view of Tammela et al., U.S. Pat. No. 6,868,234, (Tammela), makes obvious the invention of claim 8 and 20.

The Examiner alleges that one of ordinary skill in the art would have been motivated to modify Chaudhuri and Fukashiro with the teaching from Tammela to form the invention of claim 8 and 20. Applicant submits, however that these references would not have been combined and even if combined, the combination would not teach or suggest each element of the claimed invention.

That is, Tammela fails to make up for the deficiencies of Chaudhuri and Fukashiro as discussed above.

The Examiner asserts Tammela discloses a transmission ring network wherein each node receives and transmits a different wavelength compared to all other nodes in the ring network.

However, even assuming *arguendo* that the Examiner's position has some merit, Tammela fails to teach or suggest, "a switching device including at least two bi-directional ports...when the failure has occurred in said one optical signal communication line, said switching device switches so that said optical signal fed from said one adjacent communication node is received from said other optical signal communication line via one of said at least two bi-directional ports and is transmitted to said optical signal receiving device and does switching, when the failure has occurred in said other optical signal communication line, so that said optical signal to be transferred from said optical signal transmitting device to said other adjacent communication node is transmitted via an other of said at least two bi-directional ports to said one optical signal communication line," of Applicant's independent claim 7, and similarly independent claim 19.

Therefore, Tammela fails to overcome the deficiencies of Chaudhuri and Fukashiro, with respect to Applicant's invention of independent claims 7, and 19, respectively.

Therefore, Applicant respectfully requests the Examiner to reconsider and withdraw this rejection since the alleged prior art references to Chaudhuri and Fukashiro and Tammela (either alone or in combination) fail to teach or suggest each element and feature of Applicant's claimed invention.

C. The 35 U.S.C. § 103(a) Rejection over Sugawara, et al., U.S. Pat. App. Pub. No. 2002/0044315 further in view of Chaudhuri et al., U.S. Pat. App. Pub. No. 2003/0170020

The Examiner alleges that Sugawara, et al., U.S. Pat. App. Pub. No. 2002/0044315, (Sugawara), further in view of Chaudhuri et al., U.S. Pat. App. Pub. No. 2003/0170020, (Chaudhuri), makes obvious the invention of claims 25-26 and 31-32.

The Examiner alleges that one of ordinary skill in the art would have been motivated to modify Sugawara with the teaching from Chaudhuri to form the invention of claims 25-26 and 31-32. Applicant submits, however that these references would not have been combined and even if combined, the combination would not teach or suggest each element of the claimed invention.

Indeed, Applicant submits, however, that neither Sugawara, nor Chaudhuri, nor any alleged combination thereof, teaches or suggests, “*a plurality of optical switches that correspond to and communicates one of said plurality of external optical signals between said plurality of optical signal communication lines and a bi-directional communicating input and a bi-directional communicating output port of one of said specific optical multiplexing and demultiplexing devices, wherein when no failure has occurred in one of said plurality of optical signal communication lines, and when a failure has occurred in one of said plurality of optical signal communication lines, said one of said plurality of external optical signals is communicated to a bi-directional communicating input and a bi-directional communicating output port of an other of said specific optical multiplexing and demultiplexing devices,*” of Applicant’s claimed invention of independent claim 25, and similarly independent claim 31.

Neither Sugawara nor Chaudhuri discloses optical signals transmitted in a bidirectional direction through a single optical communication line. For example, in Applicant’s claimed invention “*when a failure has occurred in one of said plurality of optical signal communication lines,*” the switching device switches the optical signal that is normally fed to the transmitted device via the transmitting communication line, to a bi-directional port to be transmitted on the optical signal receiving communication line, thus enabling the

receiving communication line to have optical signals bi-directionally transmitted, i.e., optical signals being received and optical signals being transmitted thereon at the same time.

Accordingly, since both Sugawara and Chaudhuri are not relevant to the claimed invention, the claimed invention is patentable over the combined teachings of Chaudhuri and Fukashiro.

Therefore, Applicant respectfully requests the Examiner to reconsider and withdraw this rejection since the alleged prior art references to Sugawara and Chaudhuri (either alone or in combination) fail to teach or suggest each element and feature of Applicant's claimed invention.

D. The 35 U.S.C. § 103(a) Rejection over Bortolini, U.S. Pat. No. 6,813,408 further in view of Sugawara, et al., U.S. Pat. App. Pub. No. 2002/0044315 further in view of Chaudhuri et al., U.S. Pat. App. Pub. No. 2003/0170020

The Examiner alleges that Bortolini, U.S. Pat. No. 6,813,408, (Bortolini), further in view of Sugawara, et al., U.S. Pat. App. Pub. No. 2002/0044315 further in view of Chaudhuri et al., U.S. Pat. App. Pub. No. 2003/0170020, (Sugawara and Chaudhuri), makes obvious the invention of claims 27-28.

The Examiner alleges that one of ordinary skill in the art would have been motivated to modify Bortolini with the teaching from Sugawara and Chaudhuri to form the invention of claims 27-28. Applicant submits, however that these references would not have been combined and even if combined, the combination would not teach or suggest each element of the claimed invention.

Indeed, Applicant submits, however, that neither Bortolini, Sugawara nor Chaudhuri, nor any alleged combination thereof, teaches or suggests, "*an optical switch between said*

plurality of optical signal communication lines and said plurality of second optical multiplexing and demultiplexing devices, said optical switch corresponding to each of said plurality of second optical multiplexing and demultiplexing devices, ... and communicates from said fourth set of input and output ports of said plurality of second optical multiplexing and demultiplexing devices via one of said plurality of optical signal communication lines to a first set of input and output ports of an other of said plurality of first optical multiplexing and demultiplexing devices when a failure has occurred in said one of said plurality of optical signal communication lines," of Applicant's claimed invention of independent claim 27.

Neither Bortolini, Sugawara nor Chaudhuri disclose optical signals transmitted in a bidirectional direction through a single optical communication line. For example, in Applicant's claimed invention "when a failure has occurred in said one of said plurality of optical signal communication lines," the optical switch communicates optical signals from the forth set of I/O ports of the second MUX/DUX device via an optical signal communication line to a first set of I/O ports of another of the first MUX/DUX devices, thus enabling the receiving communication line to have optical signals bi-directionally transmitted, i.e., optical signals being received and optical signals being transmitted thereon at the same time.

Accordingly, since Bortolini, Sugawara and Chaudhuri are not relevant to the claimed invention, the claimed invention is patentable over the combined teachings of Bortolini, Sugawara and Chaudhuri.

Therefore, Applicant respectfully requests the Examiner to reconsider and withdraw this rejection since the alleged prior art references to Bortolini and Sugawara and Chaudhuri

(either alone or in combination) fail to teach or suggest each element and feature of Applicant's claimed invention.

E. The 35 U.S.C. § 103(a) Rejection over Sugawara, et al., U.S. Pat. App. Pub. No. 2002/0044315, further in view of Yamashita et al., U.S. Pat. No. 5,675,676 and Chaudhuri et al., U.S. Pat. App. Pub. No. 2003/0170020

The Examiner alleges that Sugawara, et al., U.S. Pat. App. Pub. No. 2002/0044315 (Sugawara), further in view of Yamashita et al., U.S. Pat. No. 5,675,676 and Chaudhuri et al., U.S. Pat. App. Pub. No. 2003/0170020, (Yamashita and Chaudhuri), makes obvious the invention of claims 29-30.

The Examiner alleges that one of ordinary skill in the art would have been motivated to modify Sugawara with the teaching from Yamashita and Chaudhuri to form the invention of claims 29-30. Applicant submits, however that these references would not have been combined and even if combined, the combination would not teach or suggest each element of the claimed invention.

Indeed, Applicant submits, however, that neither Sugawara, Yamashita nor Chaudhuri, nor any alleged combination thereof, teaches or suggests, "*when a failure has occurred in said one of said two optical signal communication lines, said external optical signal is input to a first set of input and output ports of each of said two optical multiplexing and demultiplexing devices corresponding to an other one of said two optical signal communication lines, wherein bidirectional communications are conducted through the input and output ports,*" of Applicant's claimed invention of independent claim 29.

Neither Sugawara, Yamashita nor Chaudhuri disclose optical signals transmitted in a bidirectional direction through a single optical communication line. For example, in

Applicant's claimed invention "*when a failure has occurred in said one of said two optical signal communication lines*," the optical signal is input to a first set of I/O ports of each of said optical MUX/DUX devices corresponding *to another of the two optical signal communication lines*, *thus enabling the receiving communication line to have optical signals bi-directionally transmitted, i.e., optical signals being received and optical signals being transmitted thereon at the same time.*

Accordingly, since both Sugawara, Yamashita and Chaudhuri are not relevant to the claimed invention, the claimed invention is patentable over the combined teachings of Sugawara, Yamashita and Chaudhuri.

Therefore, Applicant respectfully requests the Examiner to reconsider and withdraw this rejection since the alleged prior art references to Sugawara and Yamashita and Chaudhuri (either alone or in combination) fail to teach or suggest each element and feature of Applicant's claimed invention.

II. FORMAL MATTERS AND CONCLUSION

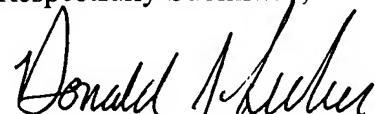
In view of the foregoing, Applicant submits that claims 1-32, all of the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

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Respectfully Submitted,


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